

REMARKS

This Reply is in response to the Office Action of June 28, 2005. Claims 1-30 are pending in the application.

Claims 1, 3, 7, 9-11, 13, 17, 20-21, 23, 27, and 30 have been amended to correct typographical errors and to more particular define the present invention. No new matter is added by any of the amendments to the claims.

Claim objections

On page 2 of the Office Action, the Examiner rejected claims 7, 9, 17, and 27 because of various informalities. These claims have been amended to alleviate these rejections. Reconsideration of these claims on this ground is respectfully requested.

Rejection under 35 USC § 112

Beginning on page 2 of the Office Action, the Examiner rejected claim 23 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim has been amended to alleviate this rejection. Reconsideration of this claim on this ground is respectfully requested.

Rejections under 35 USC §§ 102(e) and 103(a)

Beginning on page 3 of the Office Action, the Examiner rejected claims 1-3, 5, 7, 11-12, 15, 17, 21-23, 25, and 27 under 35 USC § 102(e) as being anticipated by Chen et al. U.S. Patent No. 6,756,309 (hereinafter, "Chen") or, in the alternative, under 35 USC § 103(a) as being obvious over Chen. In addition, beginning on page 8 of the Office Action, the

Examiner rejected claims 4, 6, 8-10, 13-14, 16, 18-20, 24, 26, and 28-30 under 35 USC § 103(a) as being unpatentable over Chen in view of one of Berghaus et al. U.S. Patent No. 6,244,103 (hereinafter, “Berghaus”) and Sonderman et al. U.S. Patent No. 6,751,518 (hereinafter, “Sonderman”). In accordance with the details below, these rejections are respectfully traversed.

Specifically, claim 1 as amended recites both “collecting first data representative of at least one measurement of a first thickness of at least one deposition layer, subsequent to a deposition process on at least one semiconductor product” and “adjusting the deposition process based on a comparison of the first data with data representative of a target deposition layer thickness, the target deposition layer thickness being determined prior to the collection of the first data.” Consistent with this, the specification of the present application states that, e.g., if a deposition layer thickness “is 100 angstroms away from the target of 5,000 angstroms . . . the process parameter is adjusted utilizing this feedback so that it will deposit an additional 100 angstroms” (specification, page 18, lines 15-17). Other examples can also be found on, e.g., page 12, lines 10-12.

In contrast, none of the references cited by the Examiner disclose such an adjustment to a deposition process based on the comparison of a measured deposition layer thickness with a predetermined target thickness. With regard to Sonderman, which the Examiner relied upon, e.g., with respect to the rejection of claim 13 beginning on page 13 of the Office Action, applicants respectfully submit that nowhere does Sonderman disclose adjusting a deposition process based on a comparison of a measured thickness to a particular, predetermined target thickness as recited in claim 1. Moreover, Berghaus does not disclose adjusting a deposition process for any reason, nor does Chen (as admitted by the Examiner on page 13 of the Office Action).

Consequently, it is submitted that claim 1 as amended is patentable over the art of record. Reconsideration is respectfully requested.

Applicants note that each of independent claims 10-11, 20-21, and 30 also recite the above-described feature of claim 1, and are therefore also patentable over the art of record. In addition, dependent claims 2-9, 12-19, and 22-29 (which depend on the aforementioned independent claims) are asserted to be patentably distinguishable over the art of record for at least the reasons mentioned above. A non-exhaustive example of a dependent claim having additional patentable features includes dependent claim 3 as amended, which requires “providing feedback based on the second data to both a lithography process and the etch process and adjusting at least one of the lithography process and the etch process based on the feedback.” However, neither Berghaus, Chen, nor Sonderman, alone or in combination, discloses providing feedback based on a plurality of measurements characterizing a profile of a trench in a deposition layer to both a lithography process and an etch process, such that one or both of these processes may be adjusted accordingly.

Other non-exhaustive examples include each of dependent claims 7, 17, and 27 as amended, which require that “the third data includes data representative of a measurement of the amount of dishing and/or erosion.” However, none of the cited references discloses such a measurement. With regard to column 5, lines 52-54 of Chen, which the Examiner referenced in the Office Action while rejecting claims 7, 17, and 27 beginning on page 5 of the Office Action, applicants respectfully note that this portion of Chen merely indicates that metal dishing may be taken into account, but does not disclose that a measurement of actual dishing be taken (as required by claims 7, 17, and 27). Moreover, no other portion of Chen, nor any portion of either Berghaus or Sonderman, discloses any measurement of the amount of dishing and/or erosion as recited in claim 7.

Applicants respectfully submit that, as described above, the cited prior art does not

show or suggest the combination of features recited in the claims. Applicants do not concede that the cited prior art shows any of the elements recited in the claims (as amended or prior to any amendment or cancellation). However, applicants have provided specific examples of elements in the claims that are clearly not present in the cited prior art.

For all the reasons advanced above, reconsideration and issuance of a Notice of Allowance is respectfully requested.

If there are any questions, please call the undersigned at the telephone number indicated below.

Respectfully submitted,

WILMER CUTLER PICKERING HALE AND DORR LLP



Scott M. Alter
Registration No. 32,879

1600 Tysons Boulevard
McLean, Va. 22102
TEL 703-251-9710
FAX 703-251-9797
Date: 11/21/05